

CLAIMS

What is claimed is:

5 1. A method for coding channels in a wireless communication system in which a digital signal is communicated from a transmitting station to a receiving station, the method comprising the steps of:

grouping the bits of the input signal into blocks, a size of each block being adjustable according to a predetermined block size parameter;

10 forward error correction (FEC) coding the bits of the blocks, a rate of the FEC code selected such that a number of FEC symbols in a transmitted block remains constant, even if a number of information bits in a block changes;

15 symbol modulating the FEC symbols of the blocks with a predetermined number of bits per symbol, again such that the number of modulated symbols in a transmitted block remains constant;

channel coding the modulated symbols with a spreading code and a channel code to produce a transmit signal; and

transmitting the transmit signal over a wireless communication link.

20 2. A method as in Claim 1 wherein the number of encoded symbols in each transmitted frame remains the same, even if a symbol encoding rate is changed for a given connection.

25 3. A method as in Claim 1 wherein a symbol modulator rate is selected from a group consisting of Quadrature Phase Shift Keyed (QPSK), eight level Phase Shift Key (PSK), sixteen level Quadrature Amplitude Modulation (16 QAM) and 64 QAM.

4. A method as in Claim 1 wherein the number of FEC symbols per modulator symbol is selected from the group consisting of 2, 3, 4, and 6 bits per symbol.

5. A method as in Claim 1 additionally comprising the step of:

sending a message to the receiver station from the transmitter station, the message including an indication of the coding rate used in generating the encoded frames, thereby permitting the receiver station to determine a symbol decoding rate required to properly decode the symbols of the received frame.

6. A method as in Claim 1 additionally comprising the step of:

coding each encoded symbol with a channel code to permit separation of the encoded symbols from other encoded symbols transmitted on a given radio carrier frequency signal intended for other channels.

7. A method as in Claim 1 wherein the communication link is a forward link

transmitted from a base station transmitter in a direction towards an access unit receiver station.

8. A method as in Claim 1 wherein the communication link is a reverse link

channel transmitting information from a remote subscriber unit stationed towards a receiving base station.

9. A method as in Claim 1 wherein the symbol encoding rate is chosen based

upon observed link quality conditions in the radio channel.

10. A method as in Claim 9 in which radio channels experiencing bit error rates

cause selection of a symbol coding rate which is lower.

11. A method as in Claim 1 wherein symbol encoding rates for different receivers on a given radio carrier frequency have different symbol and framing rates.